

In the claims:

1. (Canceled)
2. (Canceled)
- 5 3. (Canceled)
4. (Canceled)
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6. (Canceled)
7. (Canceled)
- 10 8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)

- 15 12. (Currently amended) A system for the oxygen delignification of pulp having a lignocellulose-containing material having a mean concentration of 8%-18% pulp consistency, comprising:
 - a pump for enabling movement of the pulp;
 - 20 a mixer in operative engagement with the pump for enabling mixing of the pulp and mixing of oxygen;
 - a first and a second reaction stage for oxygen delignification of the pulp, the first reaction stage having a first reactor ~~having a first volume~~ for permitting a first
25 dwell time of 2-20 minutes, the second reactor stage having a second reactor ~~having a second volume being at least 10 times greater than the first volume of the first reactor~~ for permitting a second dwell time of at least 20-200 minutes;

first addition means in fluid communication with the first reaction stage for adding chemicals to the system at a first position prior to the first reaction stage;

second addition means in fluid communication with
5 the second reaction stage for adding chemicals at a second position after the first reaction stage and prior to the second reaction stage;

third addition means for adding oxygen;

the first reaction stage having a pipe loop disposed
10 between the first and second addition means, the pipe loop having a length; and

the first addition means being disposed at a distance from the second addition means that is shorter than the length of the pipe loop, the pipe loop being arranged to
15 extend essentially in a horizontal plane.

13. (Original) The system according to claim 12 wherein the chemicals are mainly oxygen substances.

20 14. (Currently amended) The system according to claim 12 wherein the a first volume of the first reactor permits a first dwell time of between 2-10 minutes

15. (Original) The system according to claim 14
25 wherein the first volume permit a first dwell time of between 3-6 minutes.

16. (Currently amended) The system according to claim 12 wherein the a second volume of the second reactor
30 permits a second dwell time of between 20-100 minutes.

17. (Original) The system according to claim 16 wherein the second volume permit a second dwell time of between 50-90 minutes.

5 18. (Original) The system according to claim 12 wherein the length of the pipe loop is at least 20 meters.

10 19. (Original) The system according to claim 12 wherein the length of the pipe loop is at least 30-50 meters.

20. (Original) The system according to claim 12 wherein the first addition means is disposed at a distance from the second addition means that is at least 10 meters shorter than the length of the pipe loop.

15 21. (Original) The system according to claim 12 wherein the pipe loop is U-shaped.

20 22. (Original) The system according to claim 21 wherein the pipe loop has a highest point that is located at a bend of the U-shaped pipe loop.

23. (Original) The system according to claim 22 wherein the highest point is located in a downstream position of a flow of the pulp.

25 24. (Original) The system according to claim 12 wherein the pipe loop has a lowest point and a highest point, the highest point is less than two meters above the lowest point.

25. (Original) The system according to claim 24 wherein the highest point is between 0.2-1 meters above the lowest point.

5 26. (Original) The system according to claim 24 wherein means for degassing is disposed at the highest point.

27. (Original) The system according to claim 26 wherein the means for degassing has a controllable degassing valve from which accumulated air or residual gases are drawn off from the pipe loop.

28. (Original) The system according to claim 26 wherein the means for degassing comprises a local reduction segment to impart an increased speed flow of the pulp.

29. (Original) The system according to claim 12 wherein the first addition means comprises a first pump that is arranged to pump the pulp to a first mixer in fluid communication with the first pump.

30. (Original) The system according to claim 12 wherein the second addition means comprises a second static mixer, a second pump in fluid communication with the second static mixer and a third mixer in fluid communication with the second pump.

31. (Original) The system according to claim 12 wherein the first reaction stage has a substantially constant pressure.